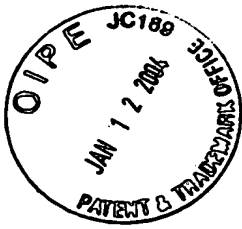


FIG. 1



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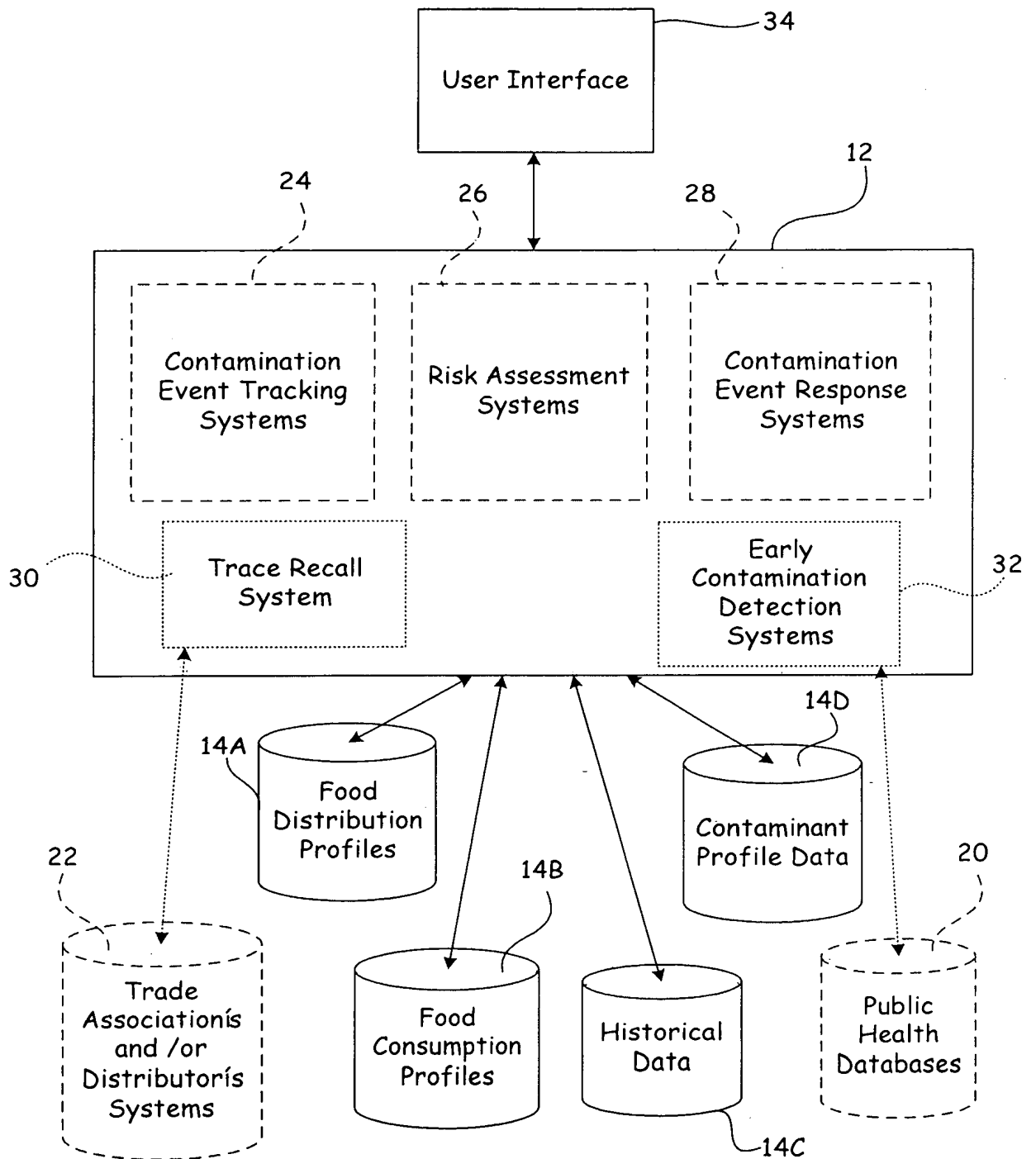
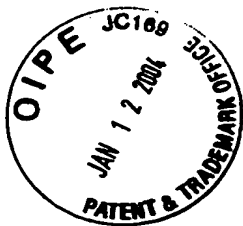


FIG. 2



	Location/Activity	Time at location	Elapsed Time	Source
<input type="checkbox"/>	Retail	1-10 days	1-10 days	Interviews
<input type="checkbox"/>	Home	1/2 - 6 days	1 1/2 - 16 days	Distributors
<input checked="" type="checkbox"/>	Consumption	1/2 - 10 days	2 - 26 days	Team Estimate
<input type="checkbox"/>	Symptoms	1 - 7 days	3 - 33 days	Literature
<input type="checkbox"/>	Medical Attention*	3 - 5 days*	6 - 38 days	Team Estimates
<input checked="" type="checkbox"/>	Mortality*	4 - 5 days*	7 - 32 days	Literature

*From symptoms

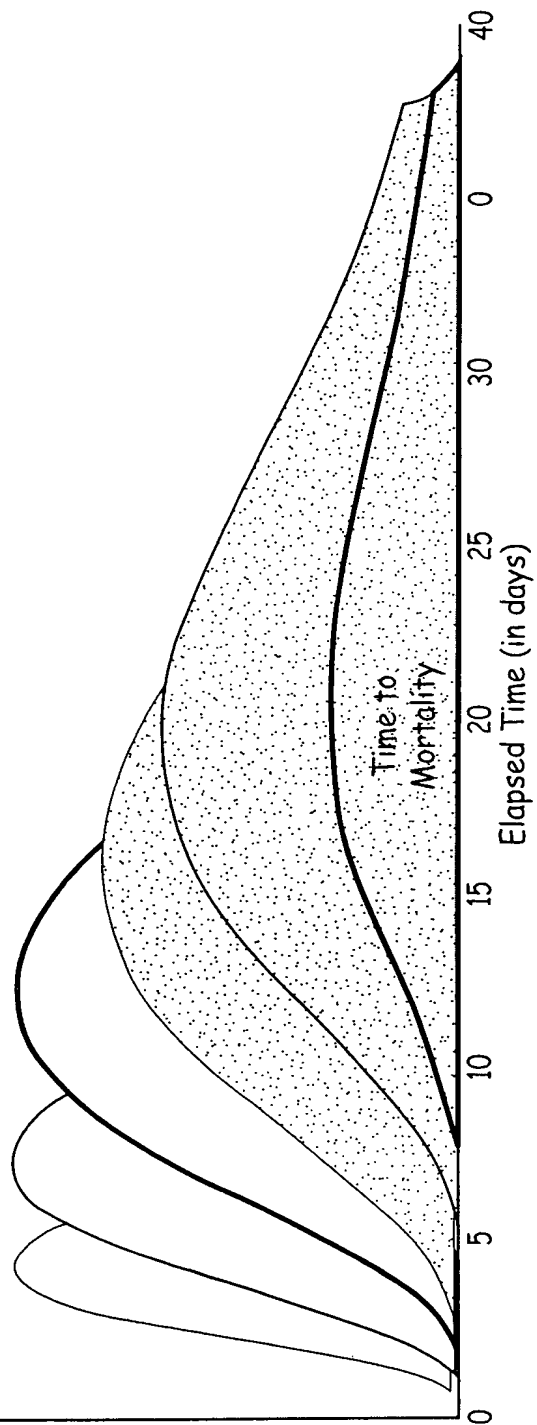
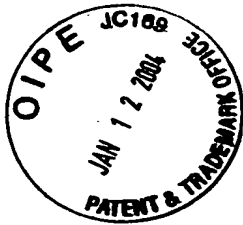


FIG. 3



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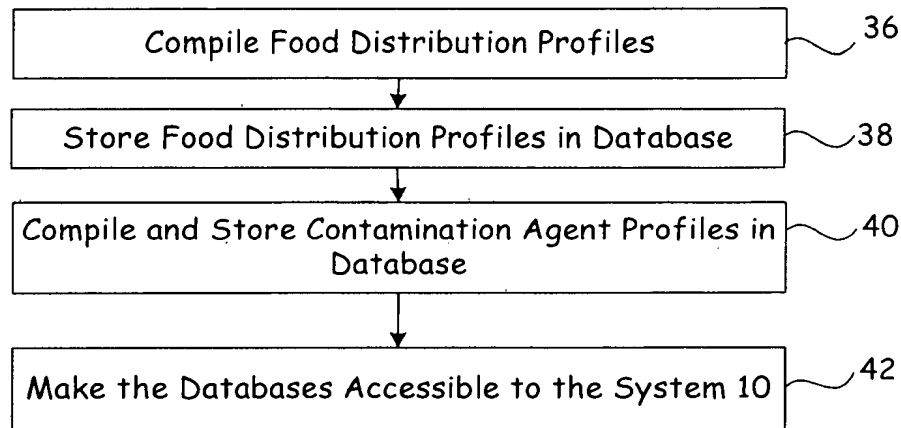


FIG. 4

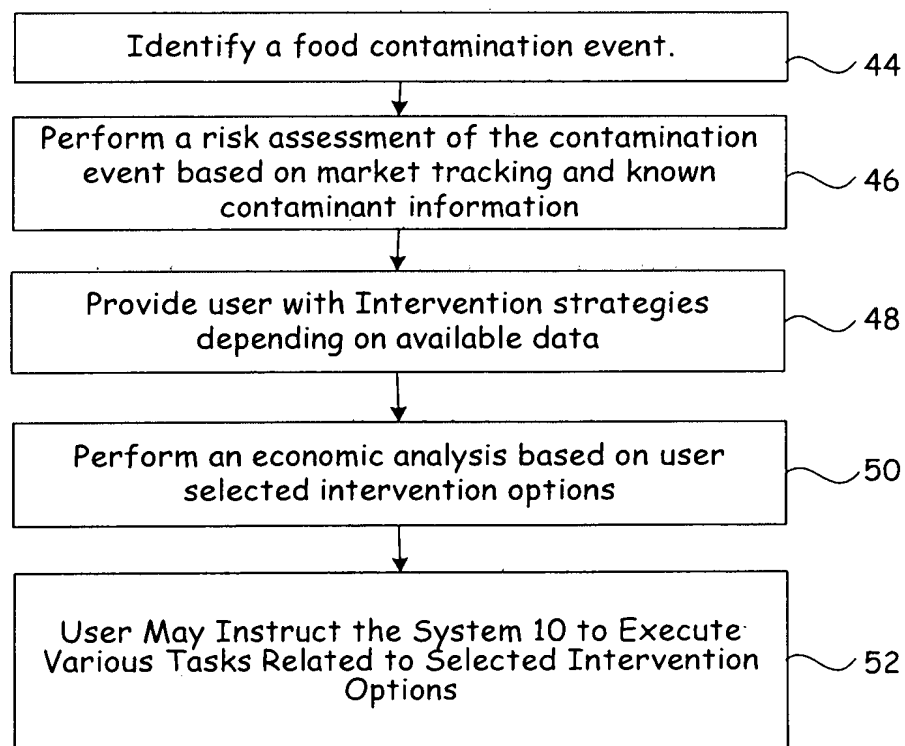
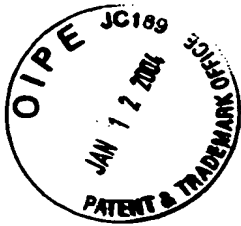


FIG. 5



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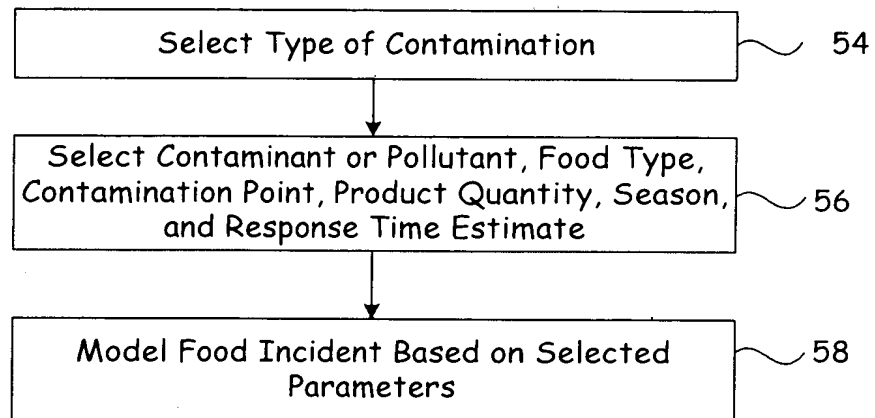


FIG. 6

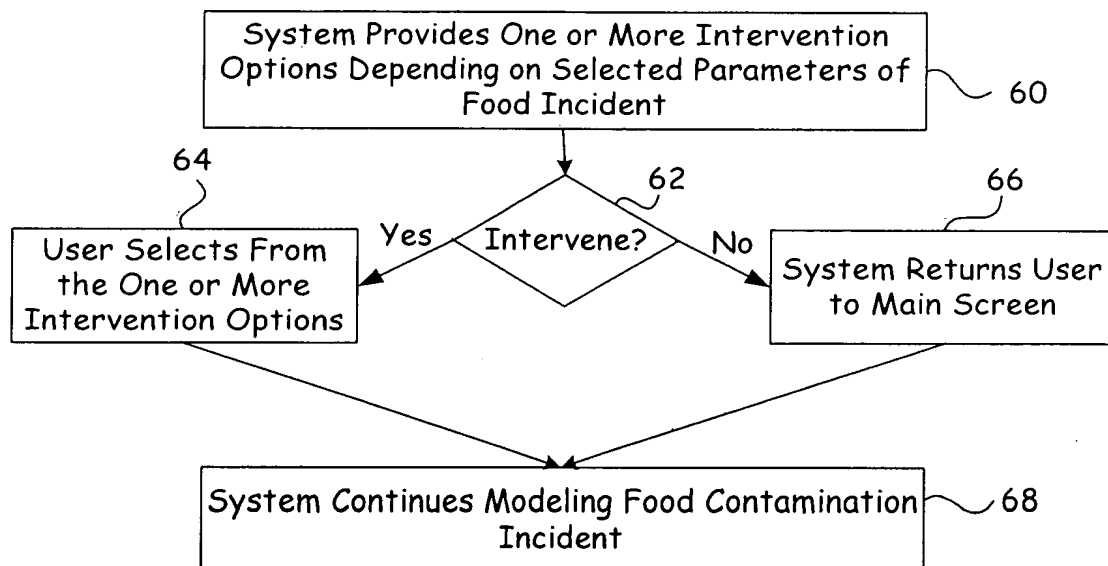
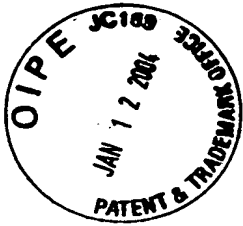


FIG. 7



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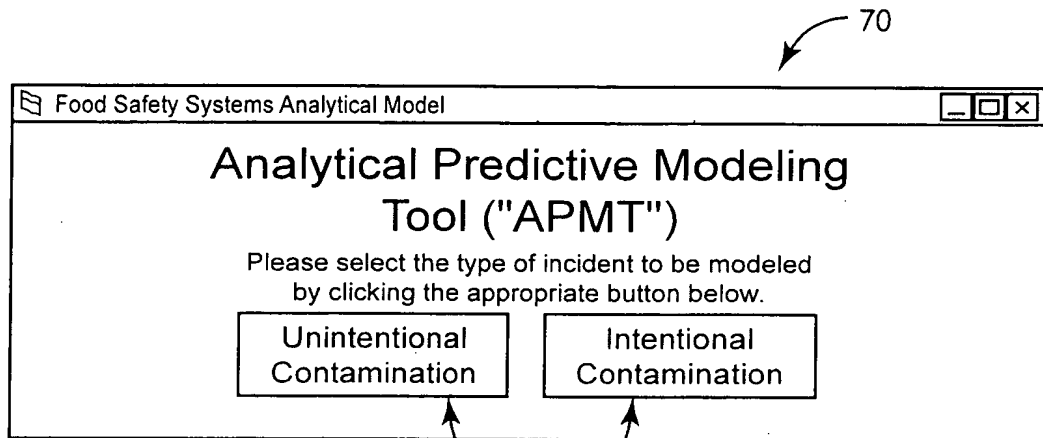


FIG. 8

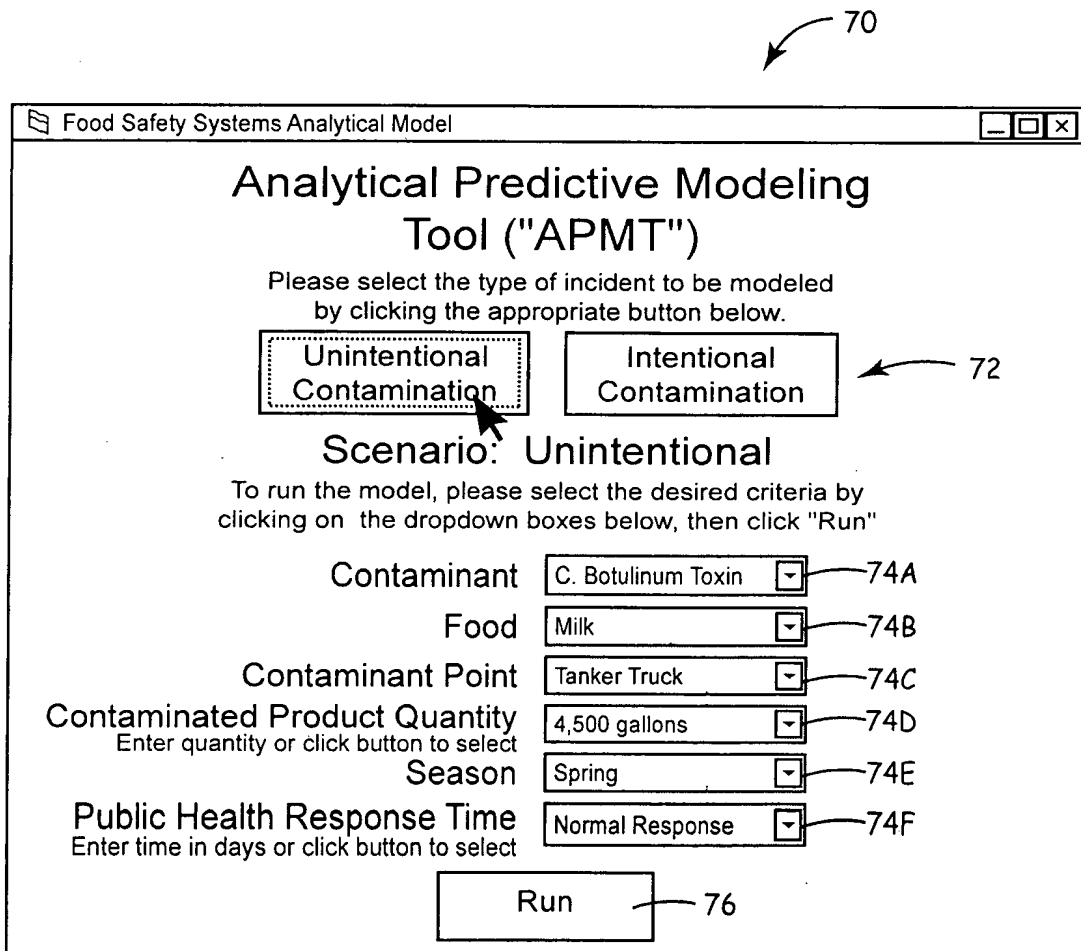
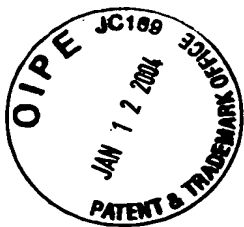


FIG. 9



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Food Safety Systems Analytical Model

Analytical Predictive Modeling Tool ("APMT")

Please select the type of incident to be modeled by clicking the appropriate button below.

Unintentional Contamination

Intentional Contamination

72

Scenario: Unintentional

To run the model, please select the desired criteria by clicking on the dropdown boxes below, then click "Run"

Agent

Food

Contaminant Point

Contaminated Product Quantity
Enter quantity or click button to select

Season

Agency Reponse Time
Enter time in days or click button to select

C. Botulinum Toxin

Milk

Tanker Truck

45,000 gallons

Spring

6 days

74

Run

76

FIG. 10

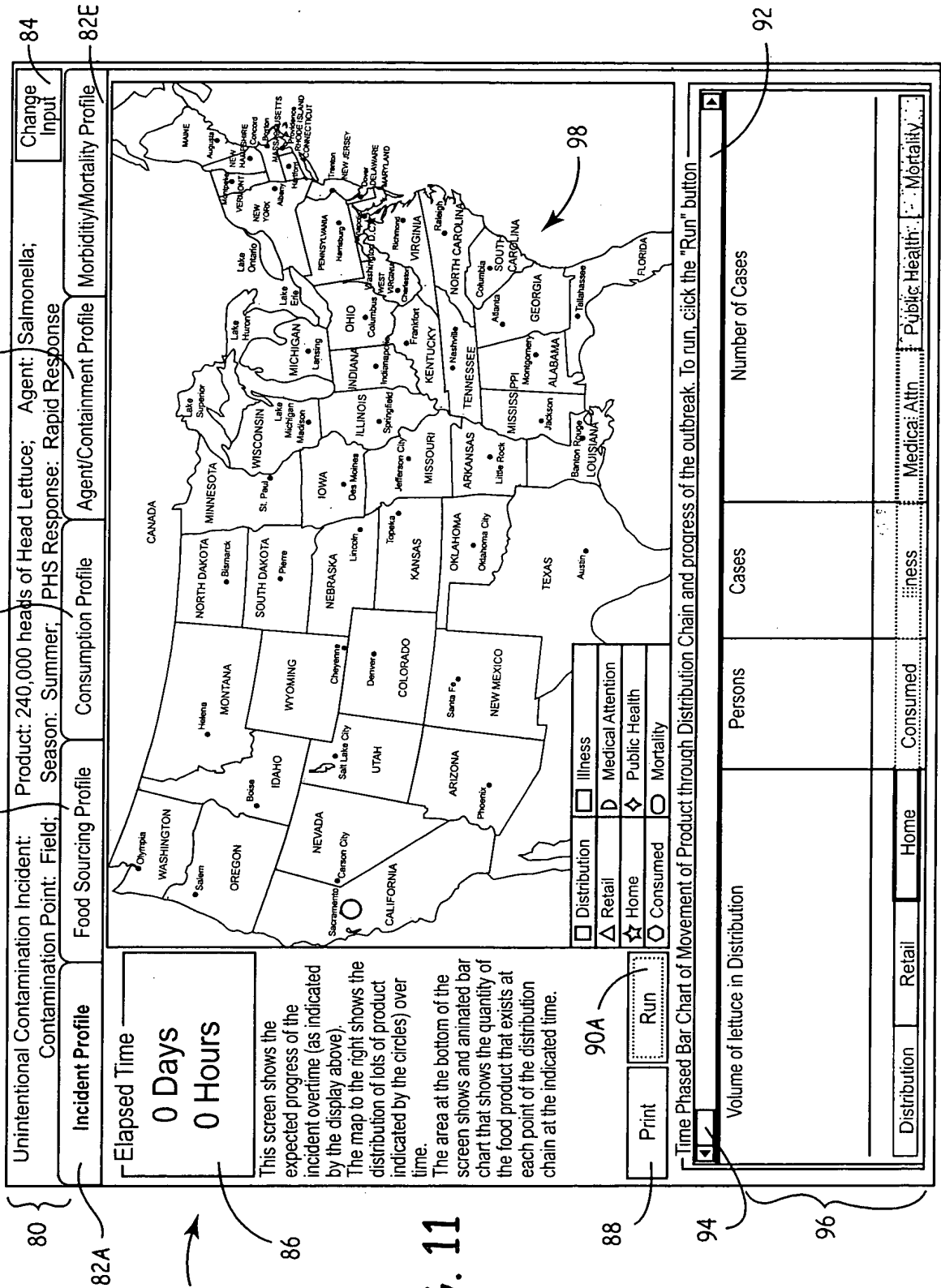


FIG. 11

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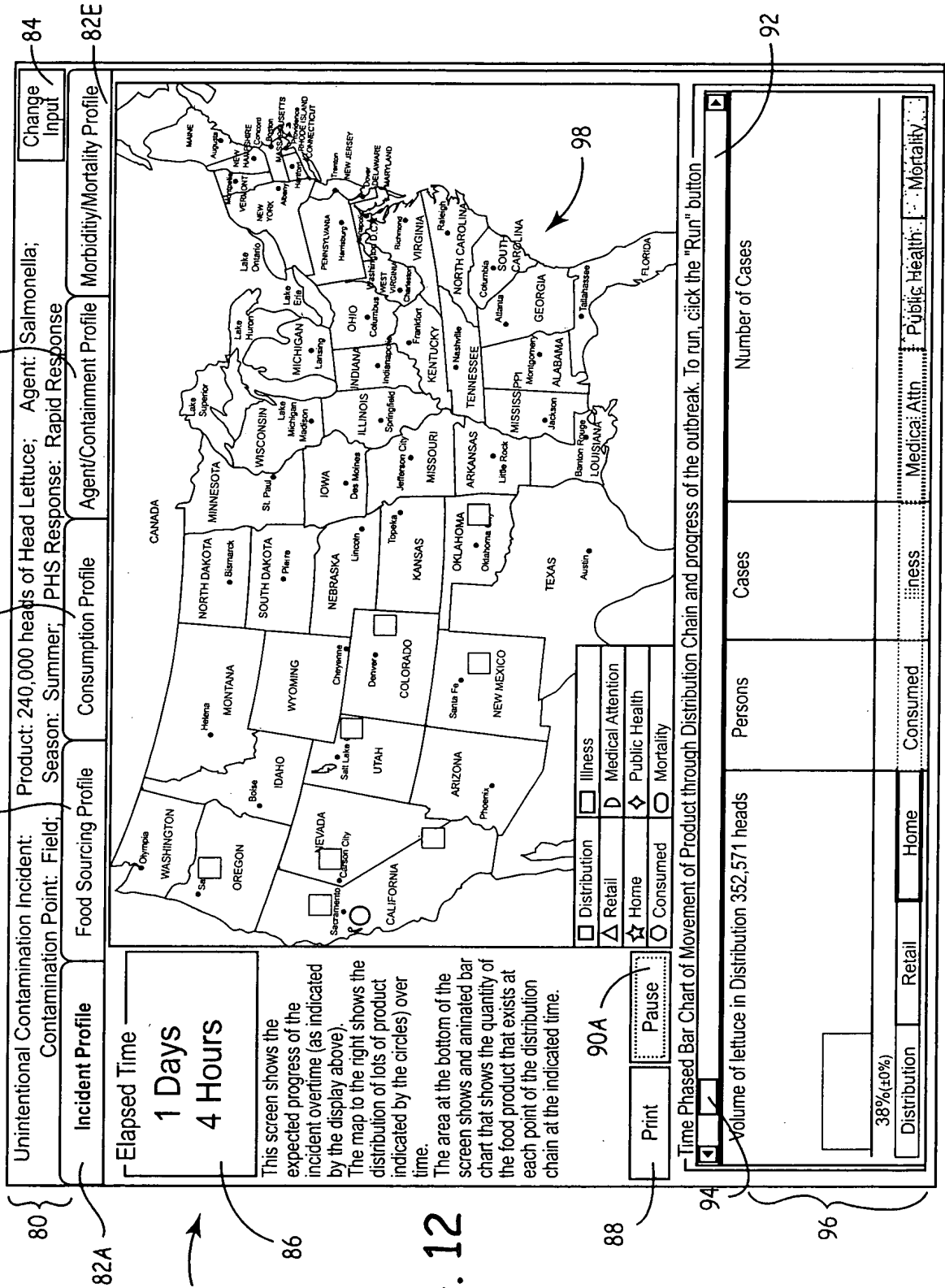


FIG. 12

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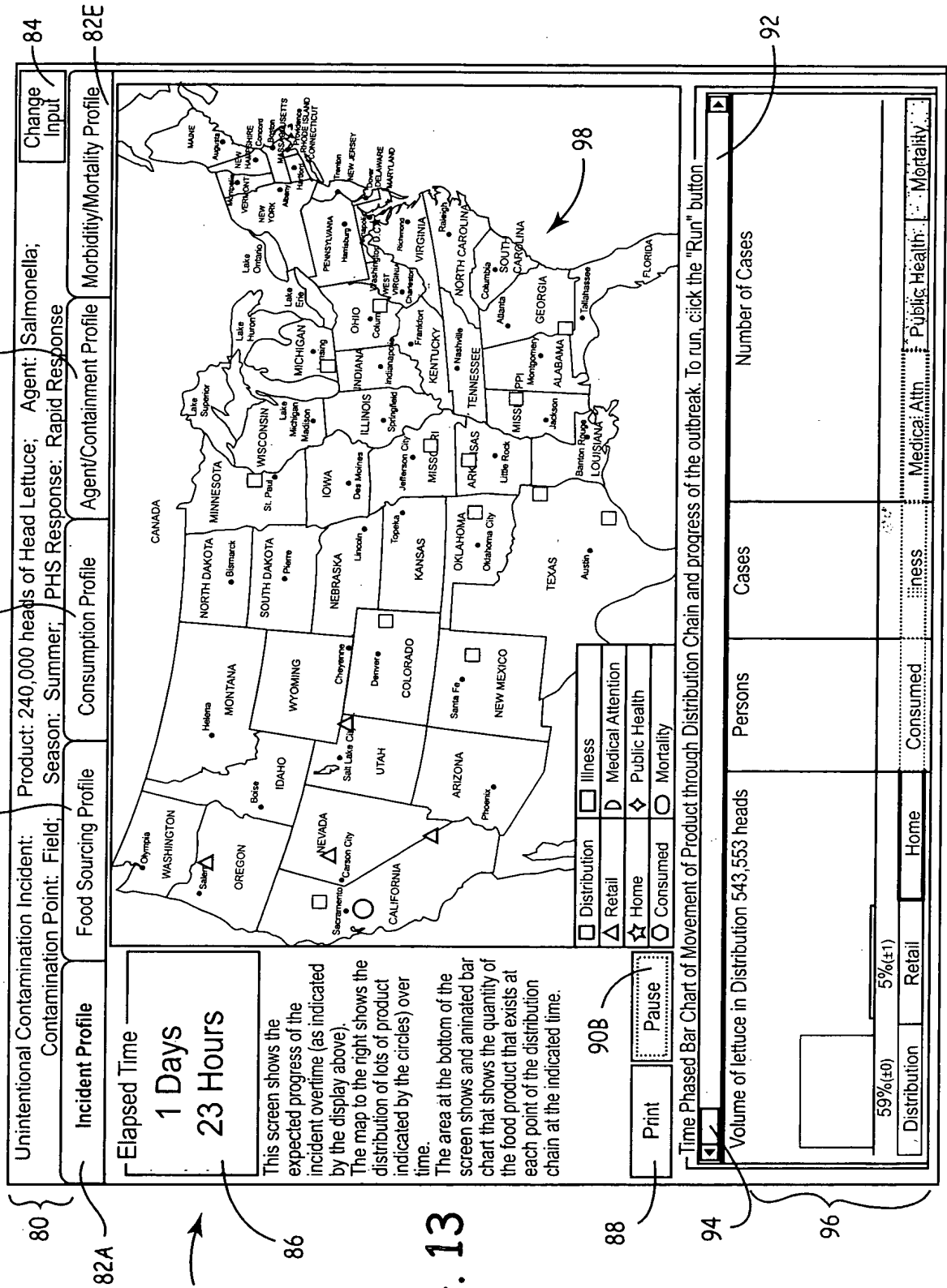


FIG. 13

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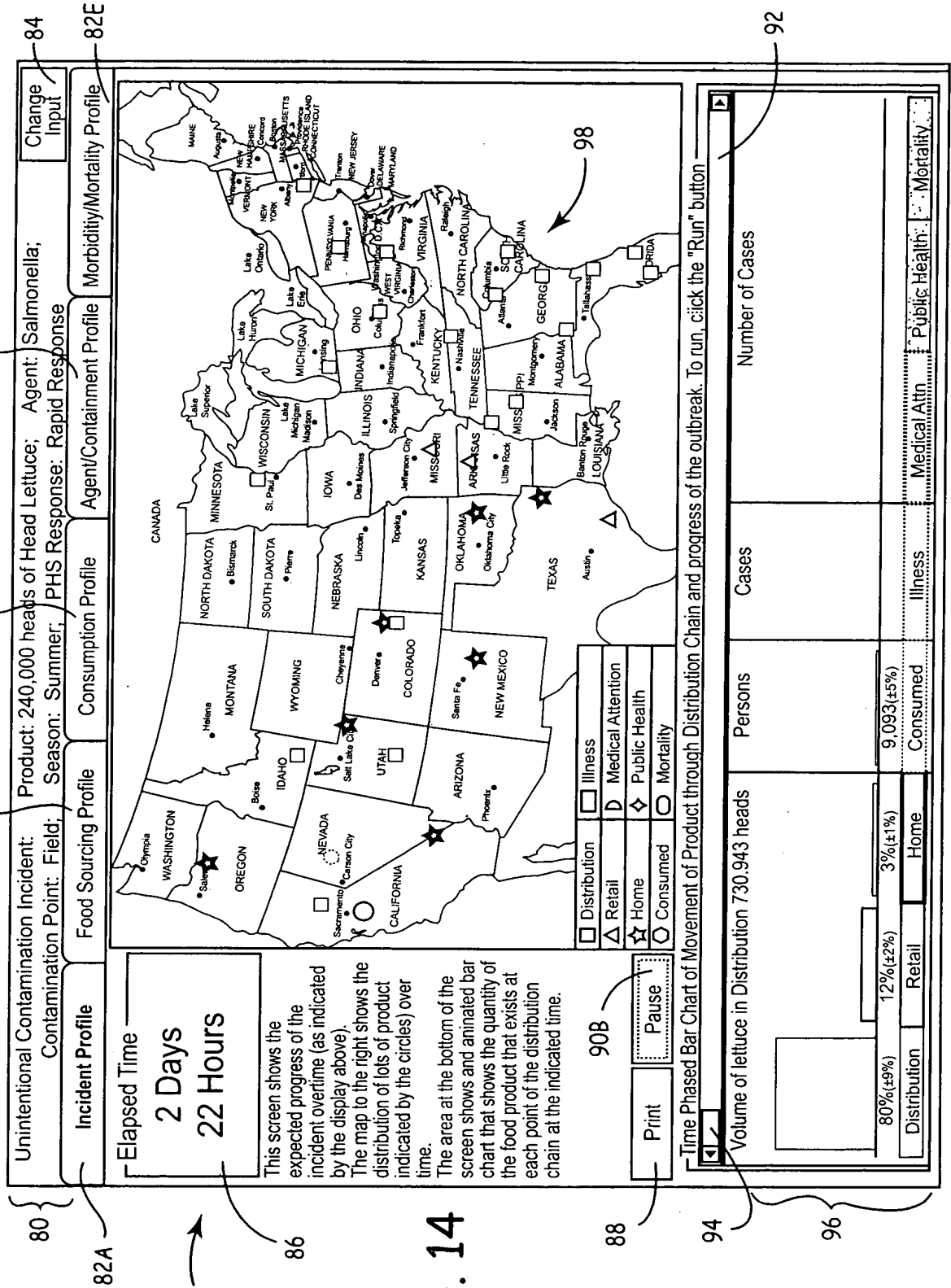
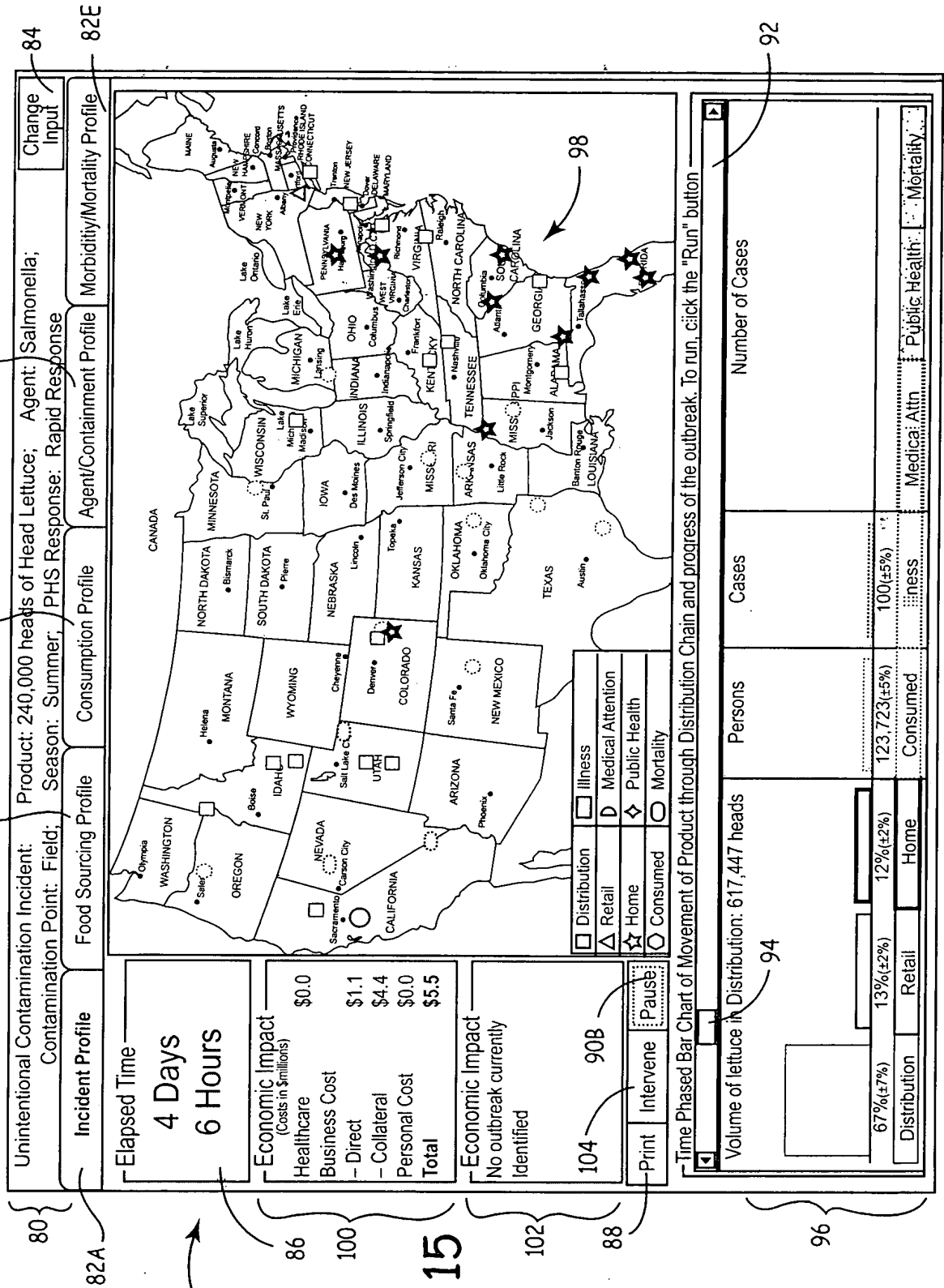
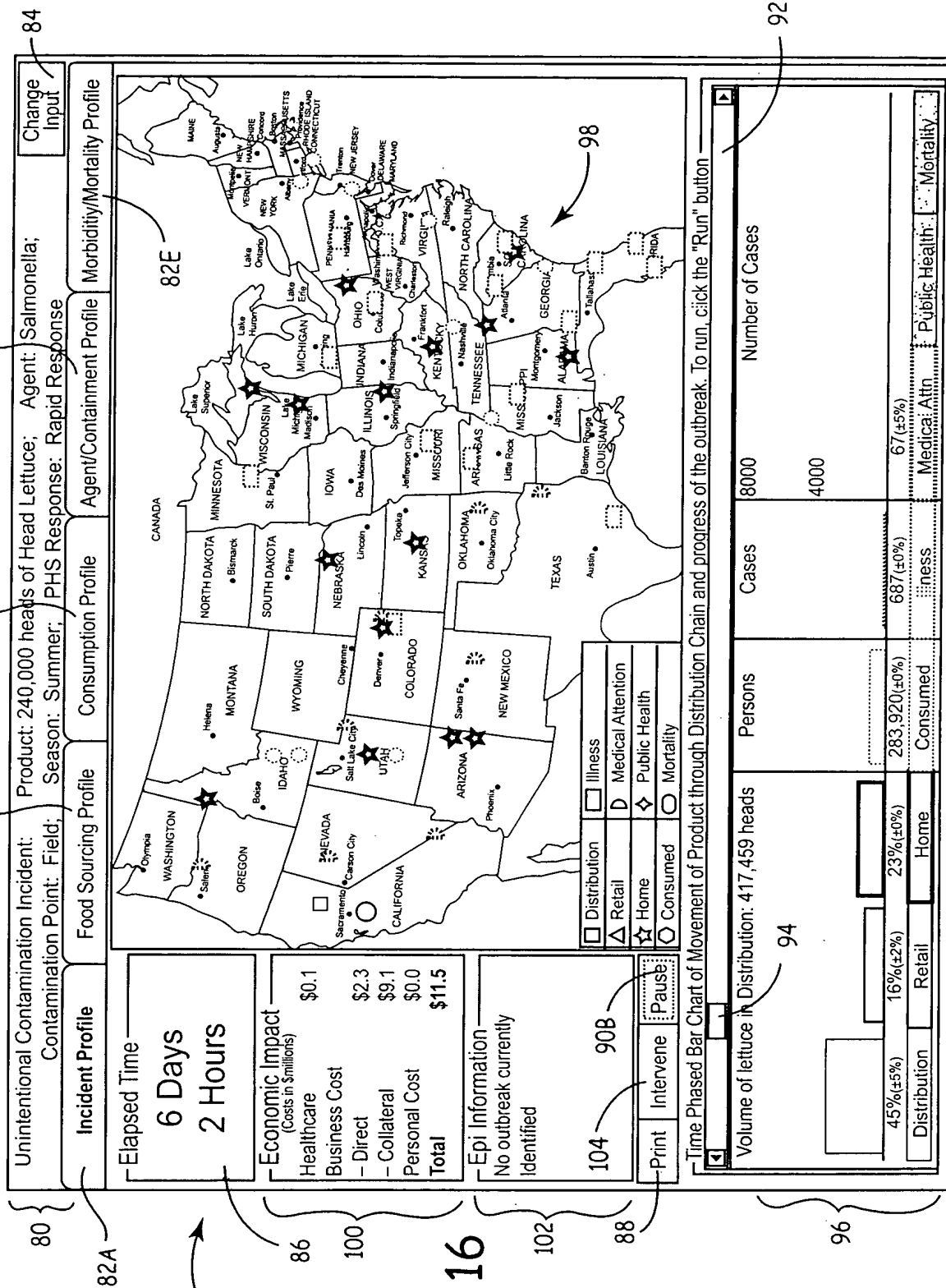


FIG. 14

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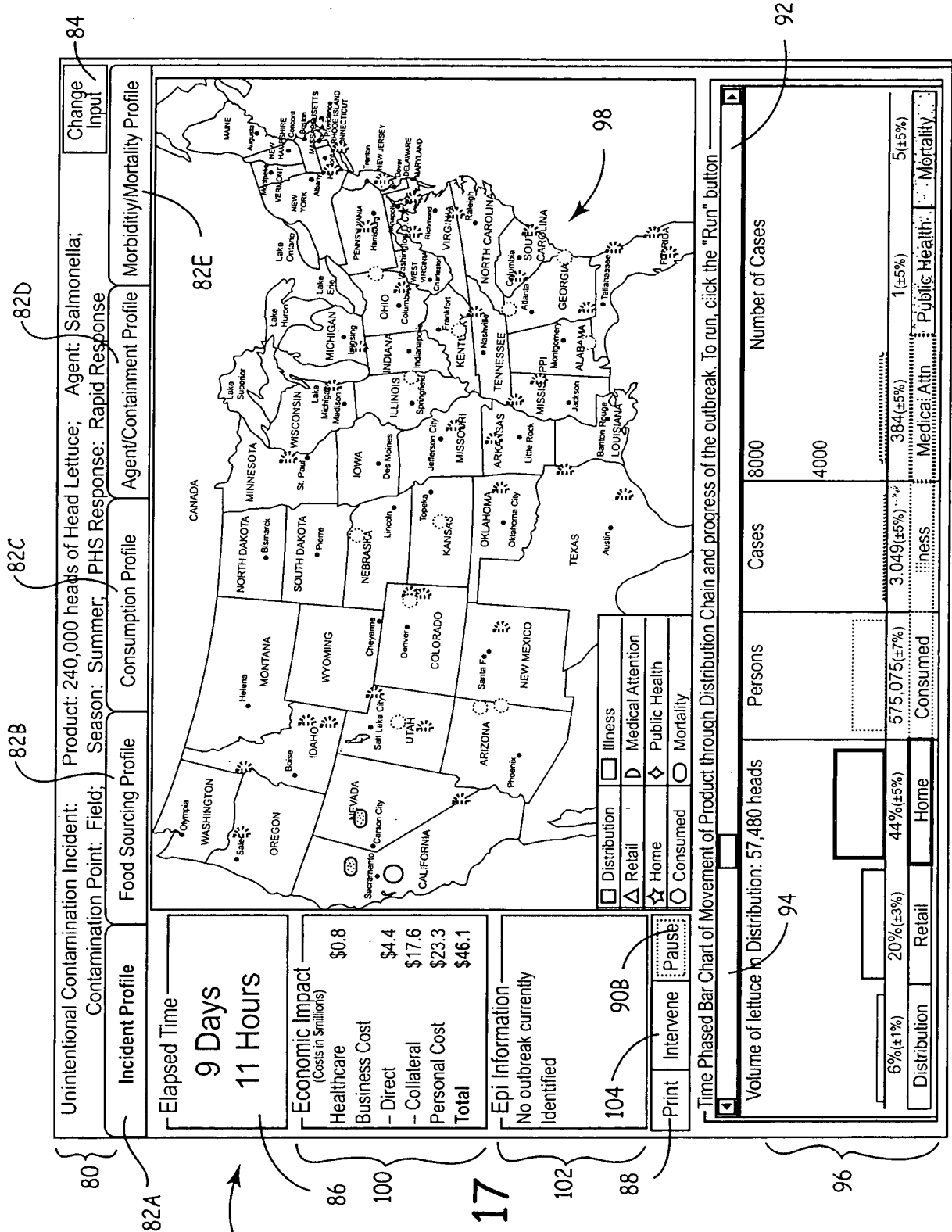


FIG. 17

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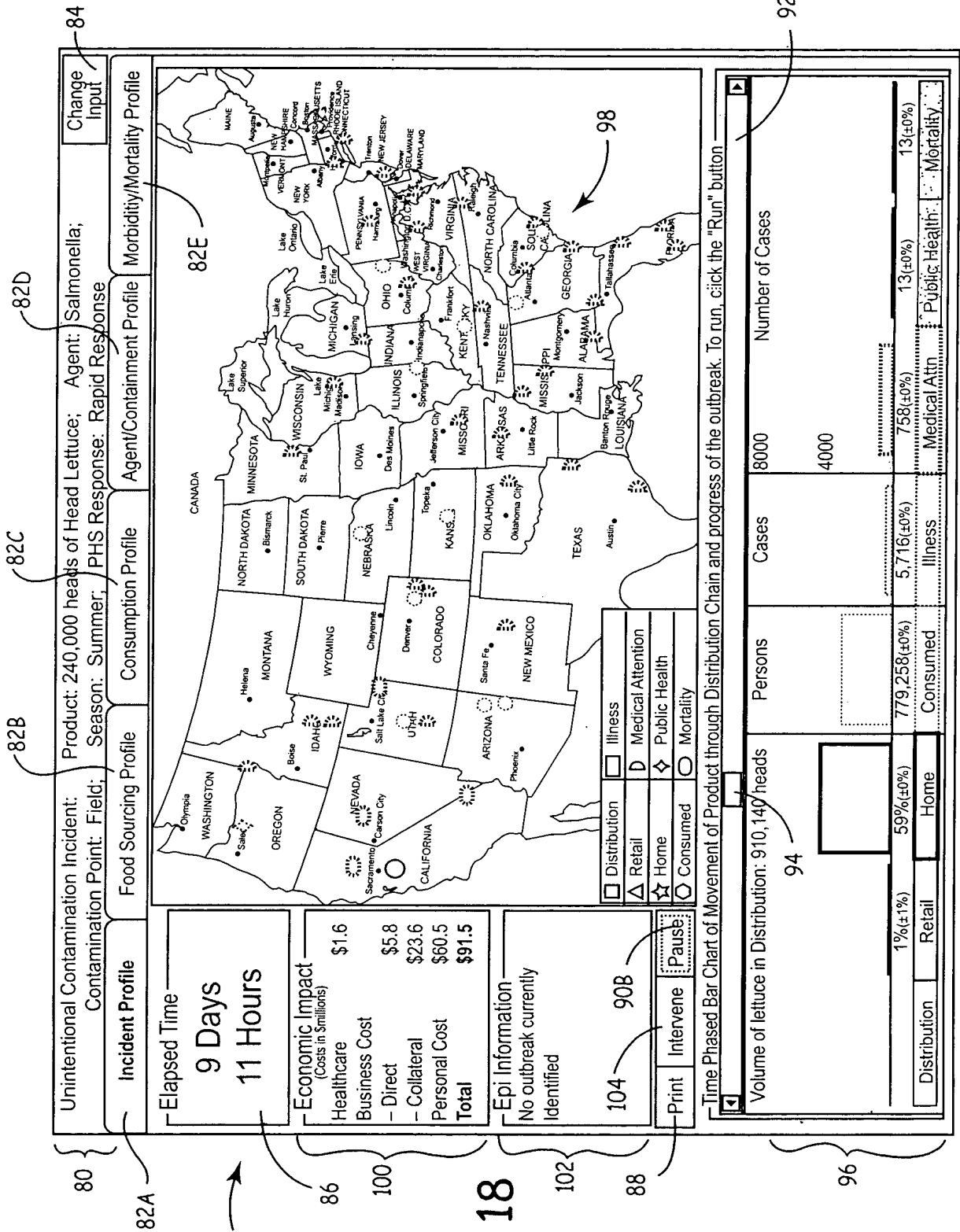
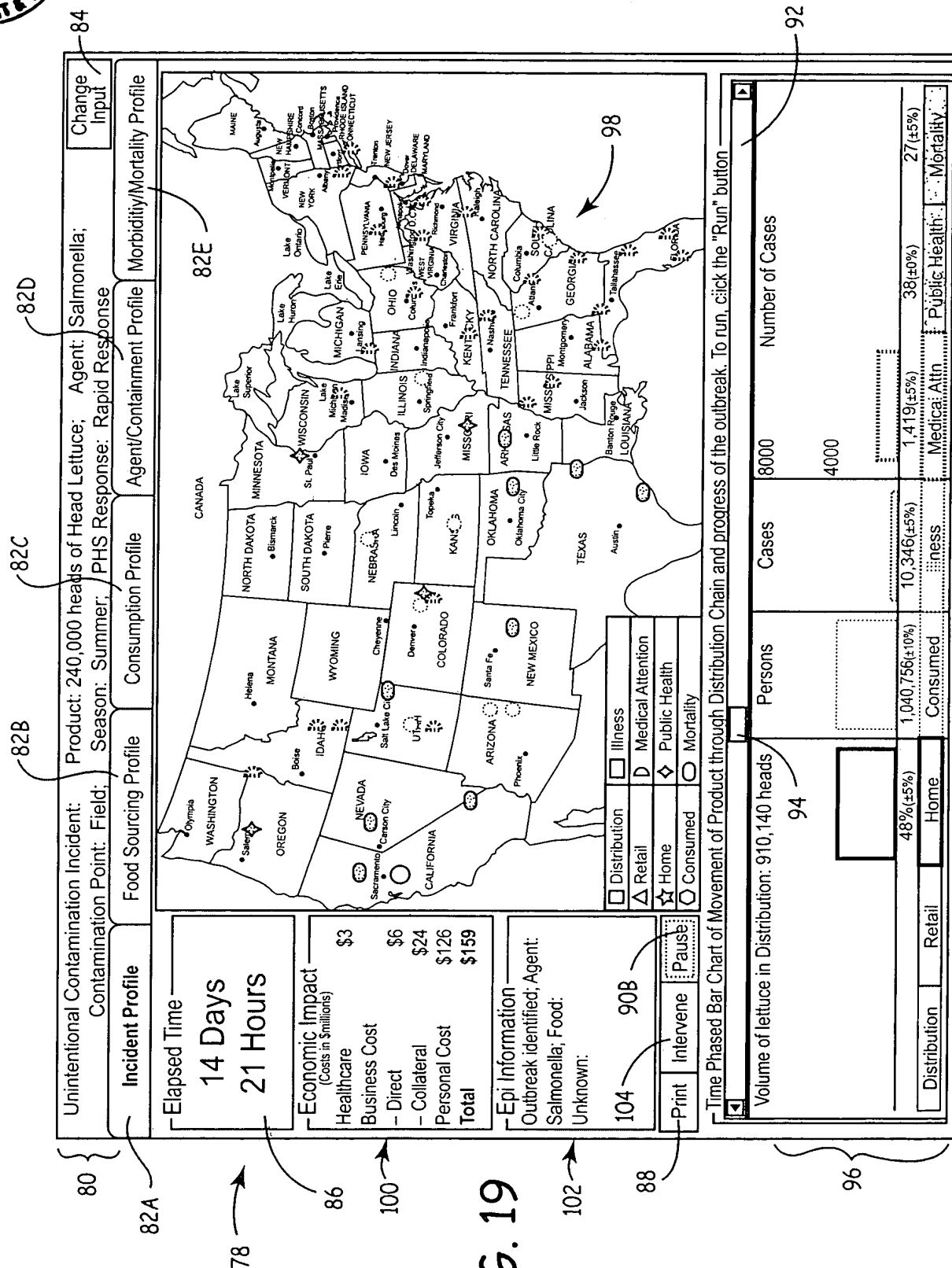


FIG. 18



80

82A

78

86

100

102

88

96

Unintentional Contamination Incident:

Contamination Point: Field;

Product: 240,000 heads of Head Lettuce;

Season: Summer;

Agent: Salmonella;

PHS Response: Rapid Response

Incident Profile

Elapsed Time

15 Days

2 Hours

Food Sourcing Profile

Consumption Profile

Agent/Containment Profile

Morbidity/Mortality Profile

Economic Impact

(Costs in \$millions)

Healthcare

Business Cost

– Direct

– Collateral

Personal Cost

Total

Map of the United States showing the distribution of lettuce.

82E

Food Safety Systems Analytical Model

Available Incident Information: Agent: Salmonella Food product: Head Lettuce Contamination Point: Unknown. Contaminated Lots: Unknown.

Please select the desired mode of intervention using the box below, and then click "Continue"

– Cost Effectiveness

Intervention Options

Public Health Alert

30% ☐ Local PHS alert for possible outbreak with these symptoms

60% ☐ PHS alert of outbreak (providing all known details)

Continue

84

92

98

106

110

Time Phased Bar Chart of Movement of Product through Distribution Chain and progress of the outbreak. To run, click the "Run" button

Volume of lettuce in Distribution: 910,140 heads	Persons	Cases	Number of Cases
47% (±5%)	1,058,667 (±10%)	10,713 (±5%)	8000
47% (±5%)	1,058,667 (±10%)	10,713 (±5%)	4000
47% (±5%)	1,058,667 (±10%)	10,713 (±5%)	40 (±5%)
47% (±5%)	1,058,667 (±10%)	10,713 (±5%)	29 (±5%)

FIG. 20

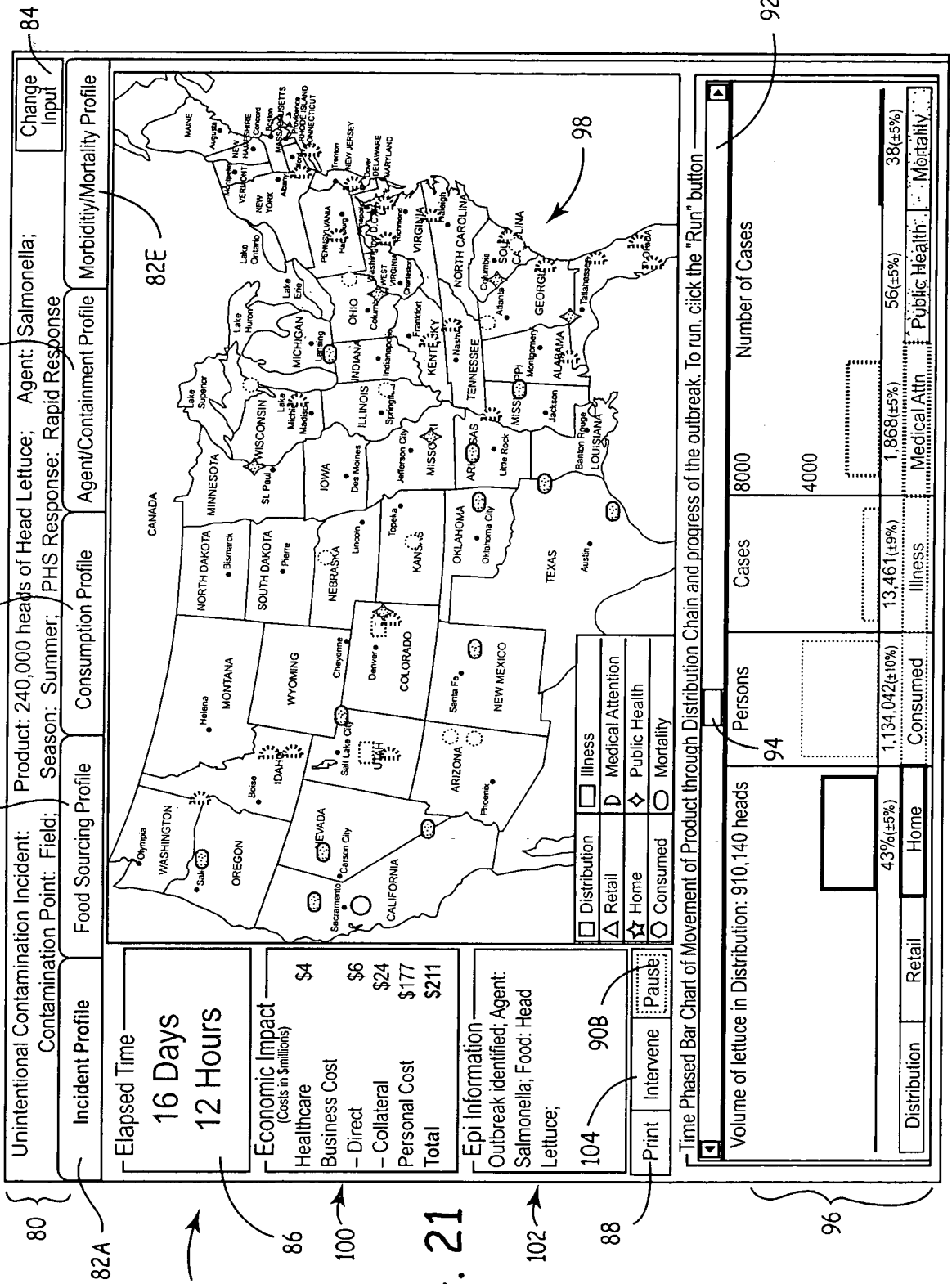
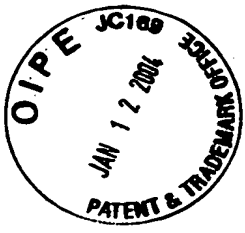


FIG. 21

19/29

80

82A

82B

82C

82D

82E

84

Unintentional Contamination Incident: Product: 240,000 heads of Head Lettuce; Agent: Salmonella;
Contamination Point: Field; Season: Summer; PHS Response: Rapid Response

Incident Profile Food Sourcing Profile Consumption Profile Agent/Containment Profile Morbidity/Mortality Profile

Elapsed Time: 16 Days 19 Hours

Economic Impact (Costs in \$millions)

Healthcare Business Cost: Direct, Collateral, Personal Cost, Total

Epi Information: Outbreak Identified; Salmonella; Food: Head Lettuce; 104

Print Intervene

Time Phased Bar

Volume of lettuce in Distribution: 910,140 heads

Persons: 1,209,117 (±11%) Consumed: 14,048 (±5%) Illness: 1,953 (±5%) Medical Attn: 59 (±5%) Public Health: 40 (±5%) Mortality: 40 (±5%)

86

100

102

88

96

98

106

108

110

92

FIG. 22

Unintentional Contamination Incident: Product: 240,000 heads of Head Lettuce; Agent: Salmonella; Contamination Point: Field; Season: Summer; PHS Response: Rapid Response

Change Input

Incident Profile

Elapsed Time: 16 Days 19 Hours

Economic Impact (Costs in \$millions):
 Healthcare Business Cost:
 - Direct
 - Collateral
 Personal Cost
 Total

Epi Information
 Outbreak Identified; Salmonella; Food: Head Lettuce;

Food Sourcing Profile

Consumption Profile

Agent/Containment Profile

Morbidity/Mortality Profile

Map of the United States showing the location of the incident (Washington state).

Food Safety Systems Analytical Model

Available Incident Information: Agent: Salmonella Food product: Head Lettuce Contamination Point: Unknown. Contaminated Lots: Unknown.

Please select the desired mode of intervention using the box below, and then click "Continue"

Cost Effectiveness

Public Health Alert

30% ☐ Local PHS alert for possible outbreak with these symptoms

20% ☐ PHS alert of outbreak (providing all known details)

Public Announcement

30% ☐ National Public Announcement

Holds

60% ☐ In-store/center hold on all the identified food product

Recalls

90% ☒ National recall of all food product

Intervention Options

108

110

Continue

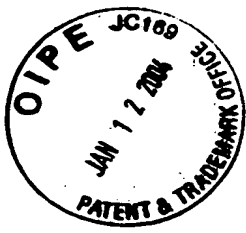
Print Intervene

Time Phased Bar

Volume of lettuce in Distribution: 910,140 heads

Distribution	Retail	Home
39% (±4%)	1,209,117 (±11%)	14,048 (±5%)
Consumed	1,953 (±5%)	59 (±5%)
Medical Attn	Public Health	Mortality

FIG. 23



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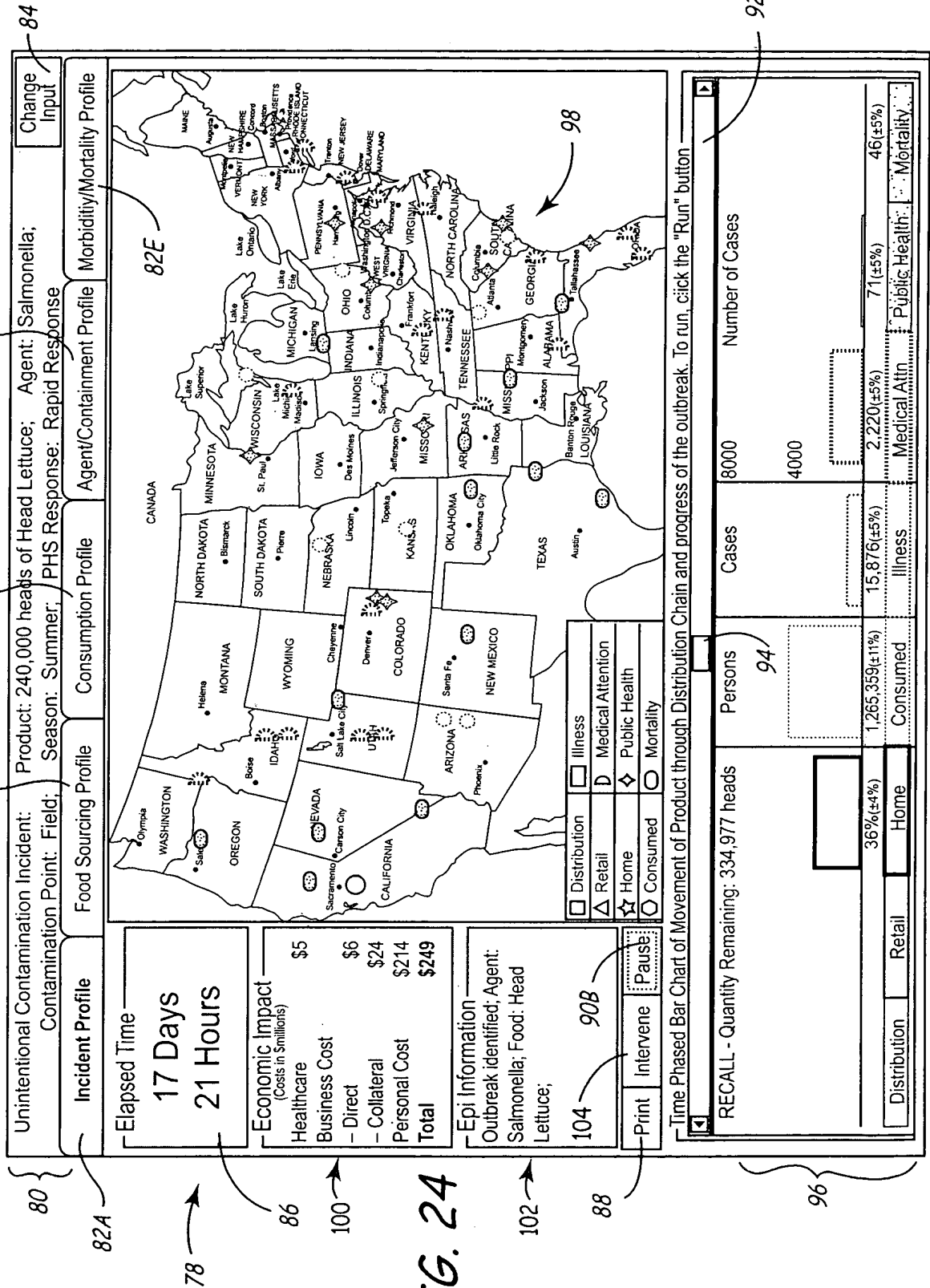
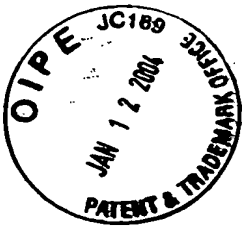
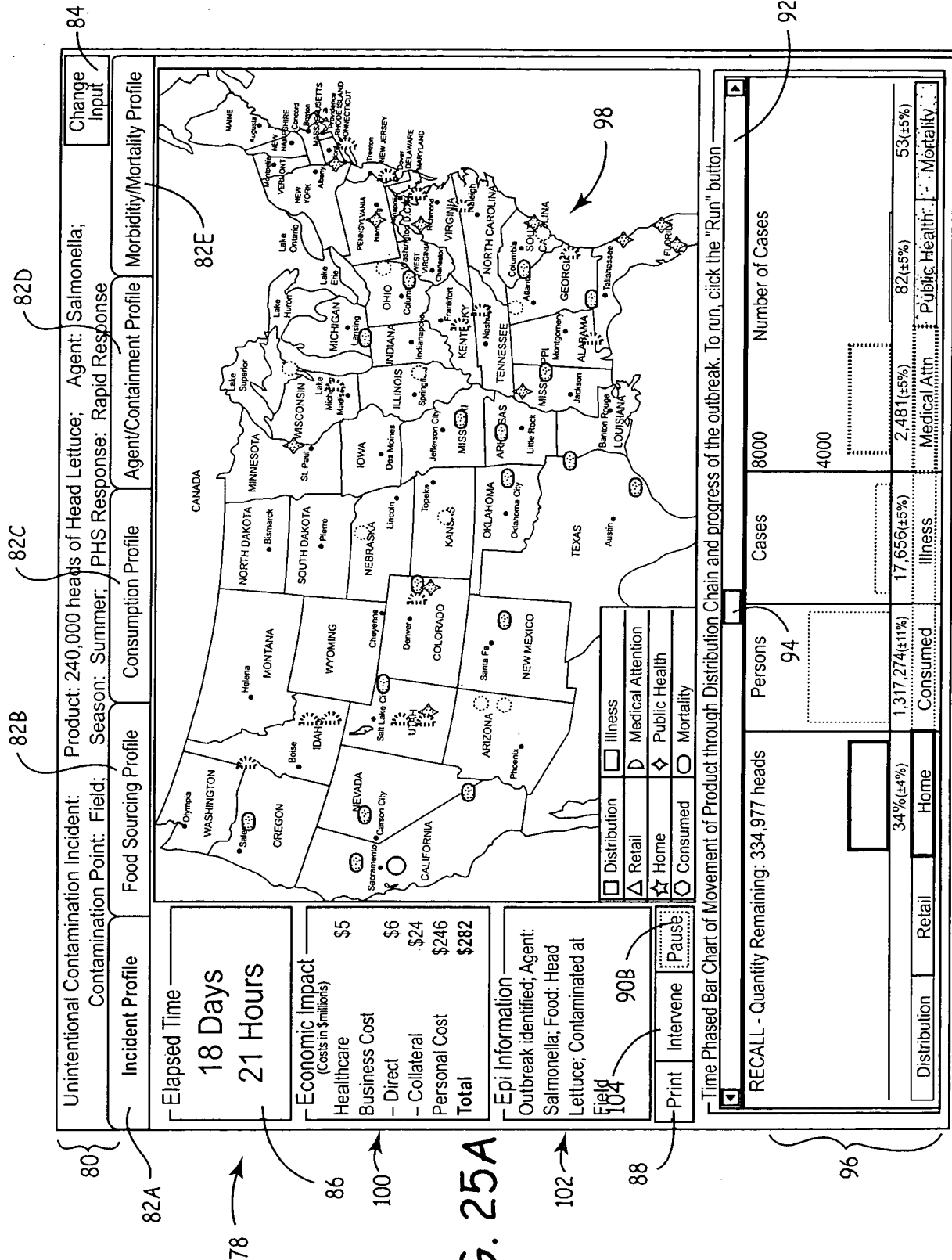


FIG. 24



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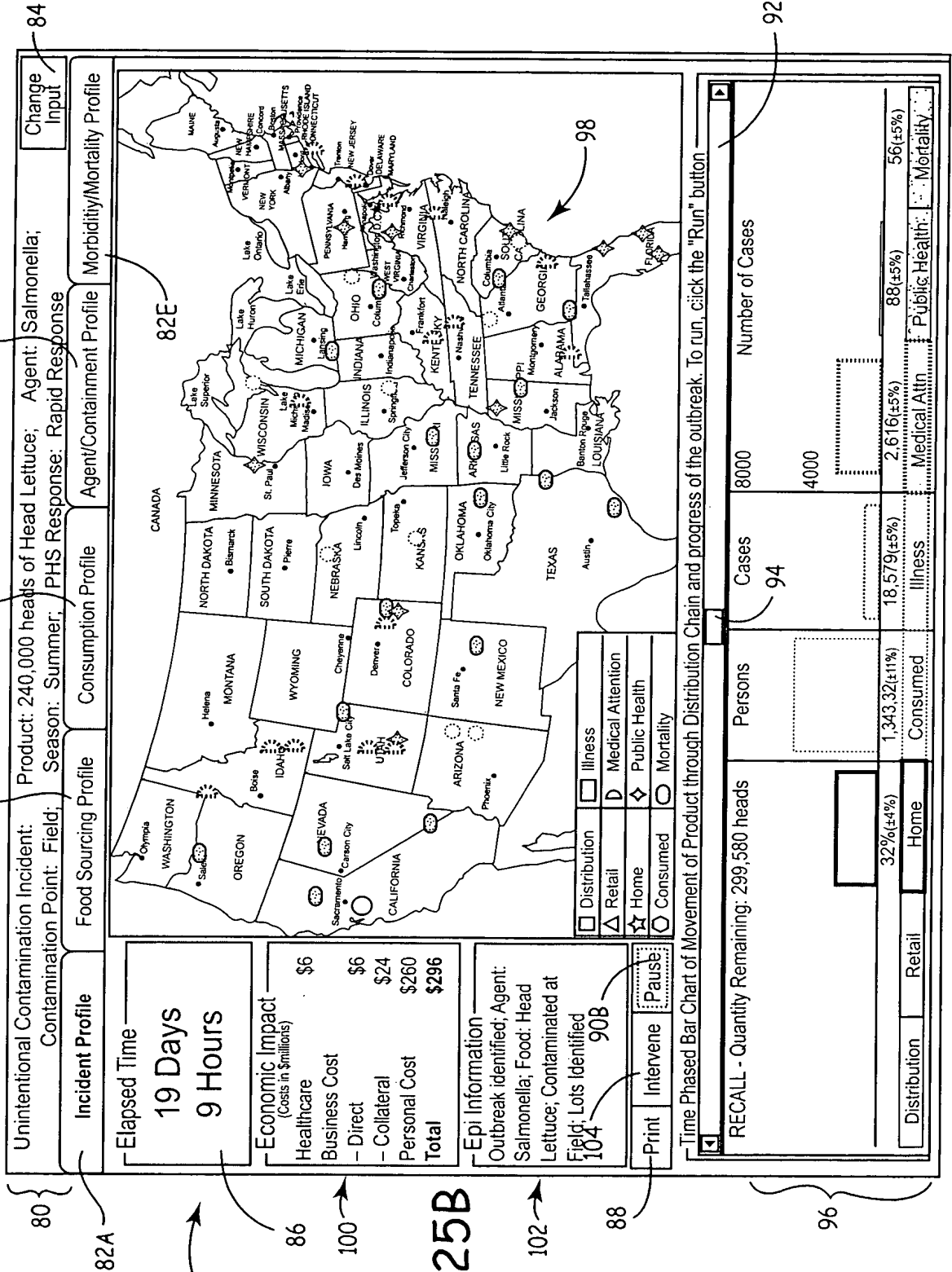


FIG. 25B

Unintentional Contamination Incident: Product: 240,000 heads of Head Lettuce; Agent: Salmonella;
Contamination Point: Field; Season: Summer; PHS Response: Rapid Response

Incident Profile **Food Sourcing Profile** **Consumption Profile** **Agent/Containment Profile** **Morbidity/Mortality Profile**

Change Input

Food Safety Systems Analytical Model

Available Incident Information: Agent: Salmonella Food product: Head Lettuce Contamination Point: Field Contaminated Lots: Identified

Please select the desired mode of intervention using the box below, and then click "Continue"

Cost Effectiveness Intervention Options

Public Health Alert

30% ☐ Local PHS alert for possible outbreak with these symptoms

20% ☐ PHS alert of outbreak (providing all know details)

Public Announcement

90% ☐ National Public Announcement

Holds

40% ☐ In-store/center hold on all the identified food product

35% ☐ In-store hold on all food product emanating from the point of contamination

90% ☐ In-store/center hold on all specific lots of contaminated/food

Recalls

40% ☐ National recall of all food product

35% ☐ Recall of all lots of food product emanating from the point of contamination

90% ☐ Recall of the specific lots of food product that are contaminated

Containment

45% ☐ Containment of locations that contain contaminated food product

Continue

Elapsed Time

20 Days

9 Hours

Economic Impact
(Costs in \$millions)

Healthcare

Business Cost

– Direct

– Collateral

Personal Cost

Total

Epi Information

Outbreak identified; Salmonella; Food: Head Lettuce; Contaminated Field; Lots identified

Print Intervene

Time Phased Bar

RECALL - Quant

Map

Map showing the distribution of contaminated lots across the Northeastern United States.

Summary

Distribution	Retail	Home	Consumed	Illness	Medical Attn	Public Health	Mortality
			1,395,147(±11%)	20,492(±5%)	2,897(±5%)	100(±5%)	63(±5%)

Map

Map showing the distribution of contaminated lots across the Northeastern United States.

FIG. 26

Unintentional Contamination Incident: Product: 240,000 heads of Head Lettuce; Agent: Salmonella;
 Contamination Point: Field; Season: Summer; PHS Response: Rapid Response

Incident Profile Food Sourcing Profile Consumption Profile Agent/Containment Profile Morbidity/Mortality Profile

Elapsed Time: 20 Days 9 Hours

Economic Impact (Costs in \$millions)

Healthcare	
Business Cost	
- Direct	
- Collateral	
Personal Cost	
Total	

Epi Information

Outbreak identified; Salmonella; Food: Head Lettuce; Contamination Point: Field; Lots identified

Print Intervene

Time Phased Bar

RECALL - Quant

Food Safety Systems Analytical Model

Available Incident Information: Agent: Salmonella Food product: Head Lettuce Contamination Point: Field Contaminated Lots: Identified

Please select the desired mode of intervention using the box below, and then click "Continue"

Cost Effectiveness Intervention Options

Public Health Alert

30% ☐ Local PHS alert for possible outbreak with these symptoms

20% ☐ PHS alert of outbreak (providing all know details)

Public Announcement

90% ☒ National Public Announcement

Holds

40% ☐ In-store/center hold on all the identified food product

35% ☐ In-store hold on all food product emanating from the point of contamination

90% ☐ In-store/center hold on all specific lots of contaminated food

Recalls

40% ☐ National recall of all food product

35% ☐ Recall of all lots of food product emanating from the point of contamination

90% ☐ Recall of the specific lots of food product that are contaminated

Containment

45% ☐ Containment of locations that contain contaminated food product

Continue

Map of the Northeastern United States showing the location of the outbreak in New York.

Map Labels: MAINE, NEW HAMPSHIRE, VERMONT, NEW YORK, CONNECTICUT, MASSACHUSETTS, RHODE ISLAND, NEW JERSEY, PENNSYLVANIA, DELAWARE, MARYLAND, VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, ALABAMA, MISSISSIPPI, LOUISIANA, ARIZONA, CALIFORNIA, NEVADA, IDAHO, MONTANA, WYOMING, UTAH, COLORADO, NEBRASKA, KANSAS, OKLAHOMA, TEXAS, MINNESOTA, IOWA, MISSOURI, ARKANSAS, MISSOURI, KENTUCKY, TENNESSEE, ALABAMA, GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, VIRGINIA, MARYLAND, DELAWARE, PENNSYLVANIA, NEW JERSEY, NEW YORK, VERMONT, NEW HAMPSHIRE, MAINE.

Map Legend: 106

Map Scale: 100 miles

Map Title: 82E

Map Author: 98

Map Date: 106

Map Version: 92

Map Description: 84

Map Notes: 82B, 82C, 82D

Map Footer: 80

Map Header: 78

Map Footer: 86

Map Footer: 100

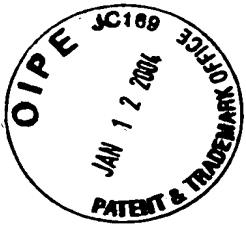
Map Footer: 102

Map Footer: 104

Map Footer: 88

Map Footer: 96

FIG. 27



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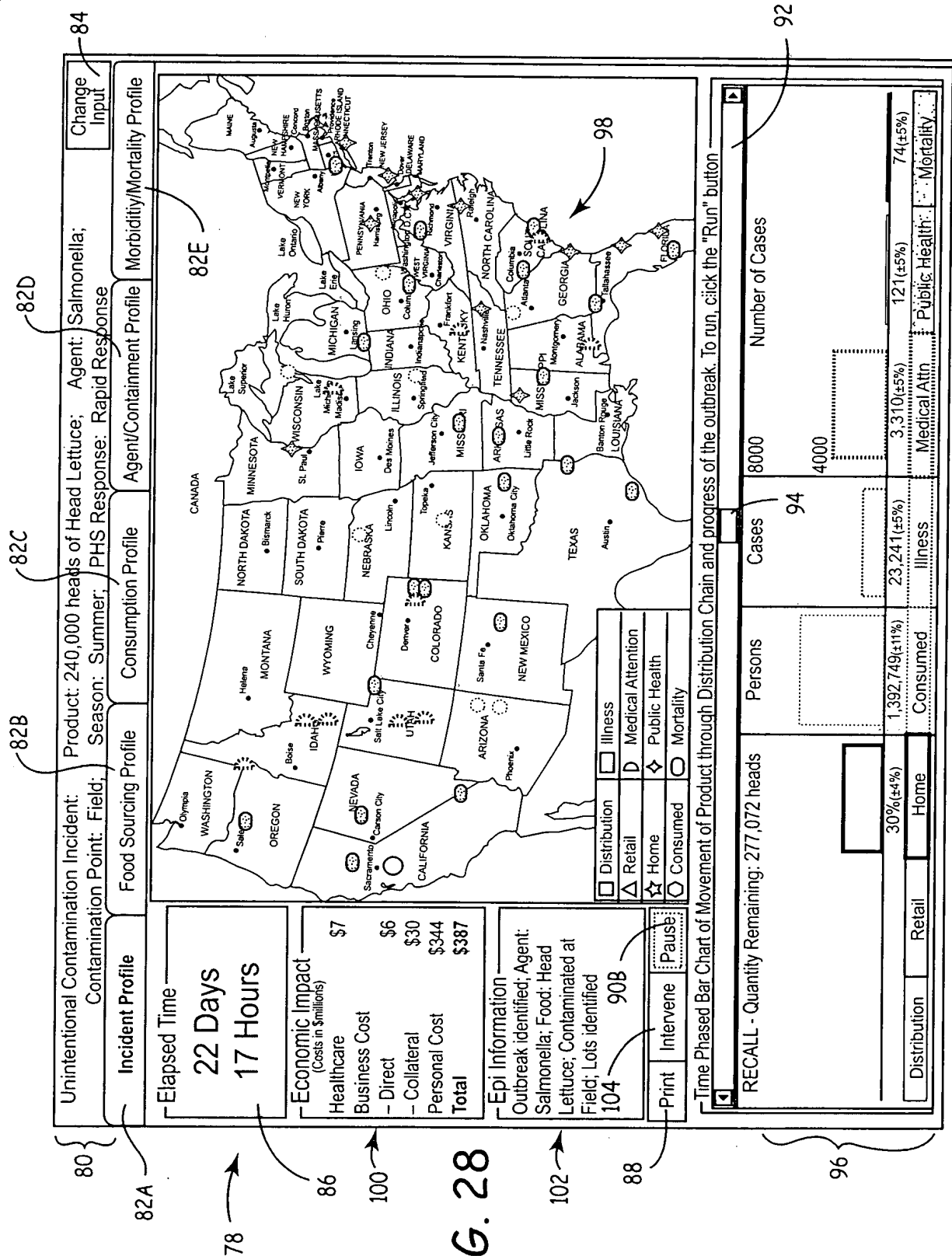
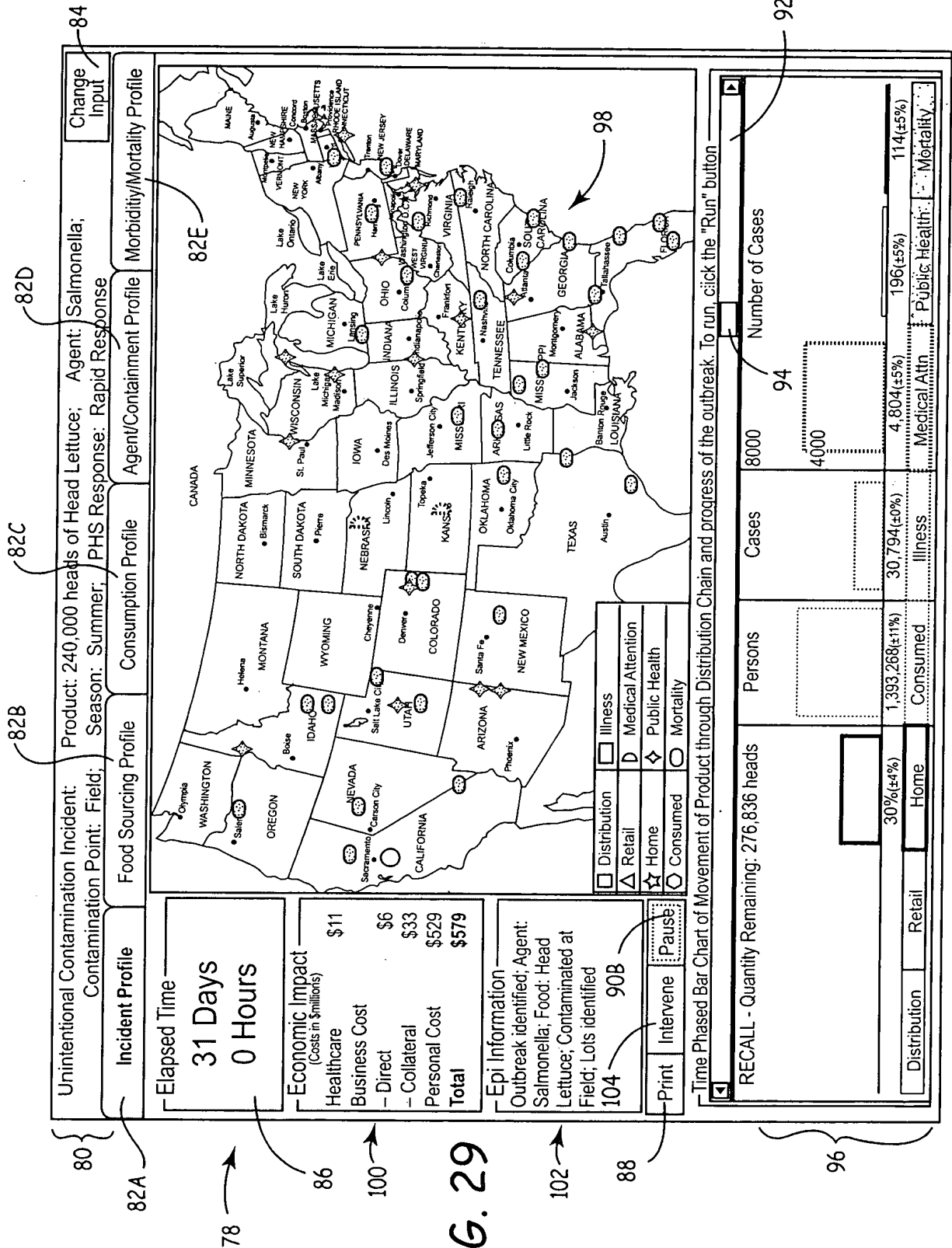


FIG. 28



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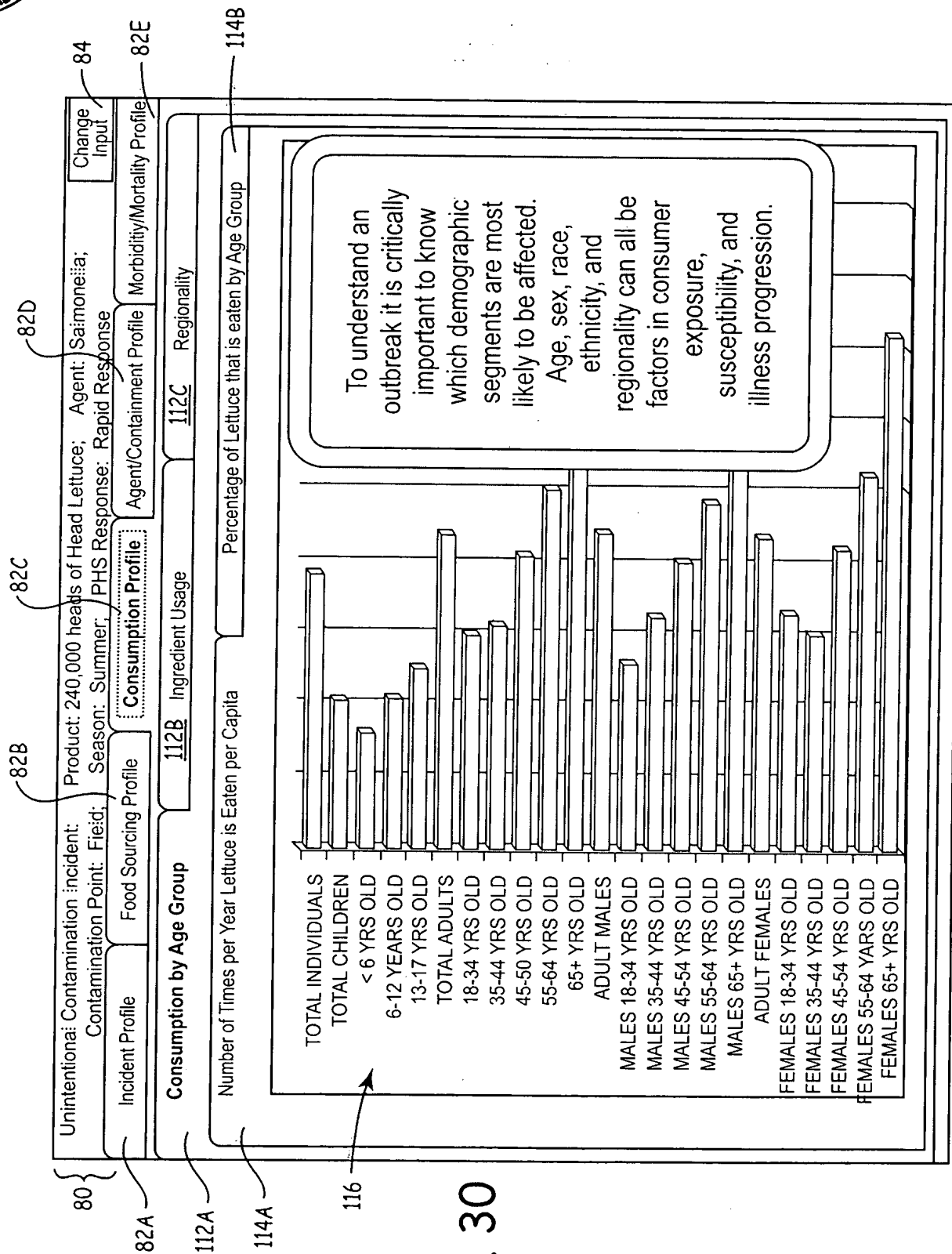


FIG. 30

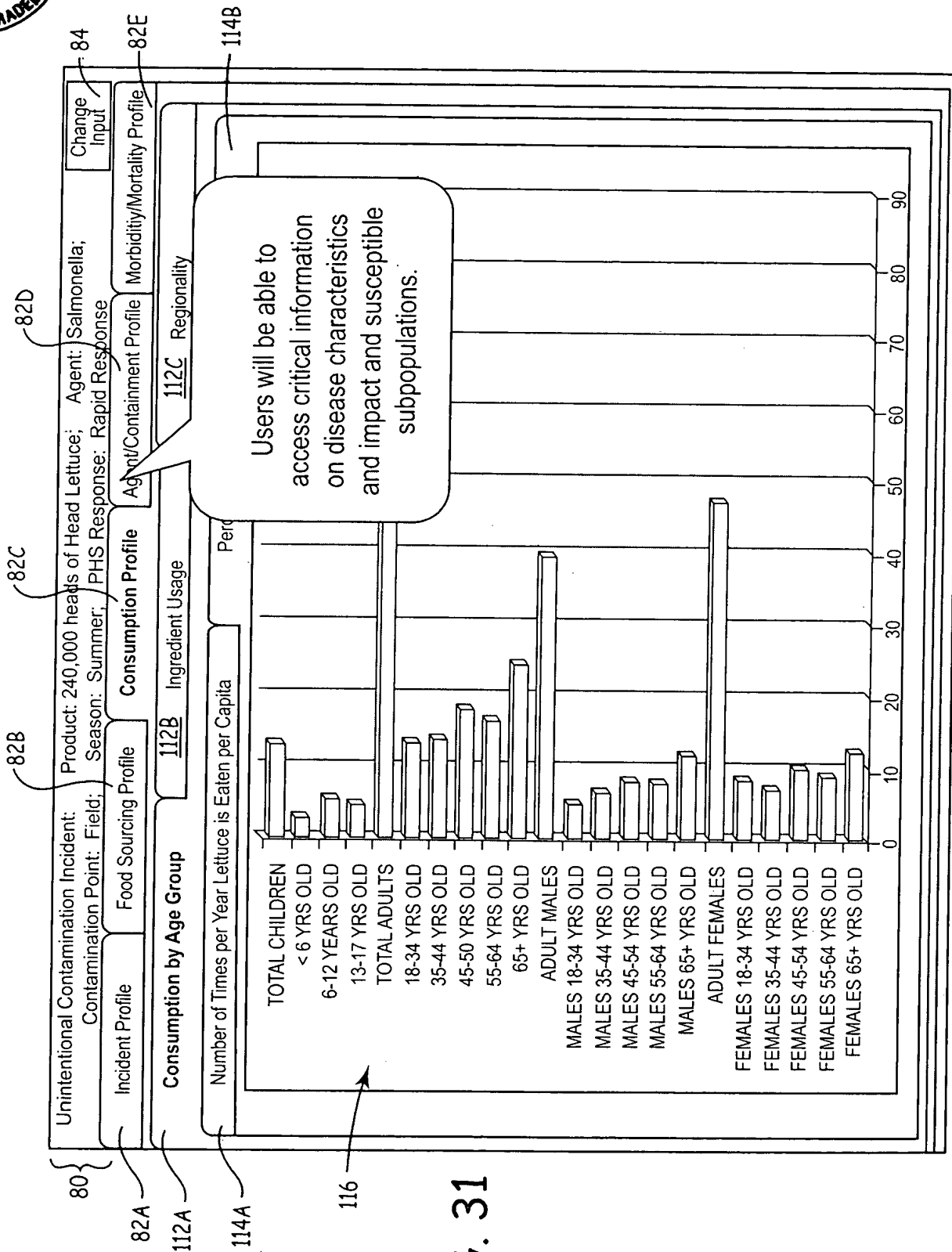


FIG. 31